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ABSTRACT

The attractive features of various strategies for resolving a simulated commons dilemma (a paradox in which a long-term benefit requires the individual to forego immediate gain) were determined in conditions where 40 groups of college age participants (total number = 136) were acting as a world policy making body or local advisory group when there either was or wasn't a resource crisis. Resource monitoring and rationing were favored under both conditions. Those representing local groups not facing a crisis favored democratic usage decisions and were more likely to endorse solutions applied locally. Findings indicate that degree of resource depletion and level of involvement in decision making affected perceptions of appropriateness of solutions. (Author/LP)

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Resolving a commons dilemma: The effect of an impending crisis and involvement in decision-making

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Paper presented at the Annual Meeting of the Eastern Psychological Association (Boston, MA, March 21-24, 1985).

Abstract

The attractiveness of various strategies for resolving a simulated commons dilemma were determined in conditions where groups of participants were acting as a world policy making body or a local advisory group and when there either was or was not a resource crisis. Resource monitoring and rationing were favored in all conditions. Only local groups not facing a crisis favored democratic usage decisions, and were more likely to endorse solutions applied locally. It appears that degree of resource depletion and level of involvement in decision making affected perceptions of appropriateness of solutions.

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Problem.

The commons dilemma is a well-known paradox in which in order to allow a long-term benefit to others as well as self, the individual must forego some immediate personal gain. Among the situations viewed as commons dilemmas are use of natural resources, disarmament, and political behavior (Crowe, 1969).

This dilemma has been termed a "tragedy" by Hardin (1968) since the inevitable solution appears to be the maximization of short-term gain with the resulting loss for all in the long run. However, in the area of resource usage, a number of interventions have been suggested in order to prevent such an outcome. One is the provision for environmental monitoring so that those utilizing the resource are made aware of the degree of depletion of the resource pool (Crowe, 1969). Cass and Edney (1978) found that this intervention together with division of the resource into territories encouraged a more optimal harvesting strategy in a laboratory analogue. A third approach is to use incentive systems such as rationing or increasing prices of the resource. Stern (1976) demontrated that such incentives can be effective when they immediately affect short-term personal gain. A fourth approach is to use strategies to reduce rate of resource usage without arousing psychological reactance through perceived restriction of personal freedom. Stern (1977) advocates making resource management decisions at a local rather than national level in order to enhance the perception of freedom.

This study used a laboratory simulation of a commons dilemma to test the attractiveness of combinations of these four intervention approaches under circumstances where a necessary resource would be depleted either within one's lifetime or far beyond it if no action were taken, and where individuals were either directly or only indirectly involved in making decisions regarding the utilization of these approaches.

Subjects.

One hundred thirty-six students volunteered for the study in order to earn extra credit toward their grades in their college psychology courses.

Procedure.

Participants were presented with a written hypothetical scenario describing the use of a nutritionally necessary mineral by the inhabitants of a planet which is divided into twelve territories of approximatley equal size and distribution of the mineral. Each participant was instructed that they were either a member of the planet's Committee on Natural Resources which has the power to determine utilization of resources for all territories'(Committee Member condition), or that they were part of a group representing their territory to this committee (Territory Representative condition). In addition, the time to depletion of the resource was described to be either 30 years or 300 years. The participant was then instructed to select two best and two worst solutions to this problem from a list of seventeen. These included all combinations of four sets of opposing strategies: 1) monitoring of the mineral's supply versus

no monitoring; 2) a rationing scheme versus a pricing scheme to discourage usage; 3) developing separate approaches for each territory versus the same approach for all; 4) decisions made by referenda or by the Committee. The participant could also decide to take no action at the present time. A rationale was also recorded for their choices. Participants then met as Committees or Territory Representatives in groups of three or four and reached consensus on solutions and rationale.

Results.

Usable data were obtained for all forty groups, except that one group in the Committee/300 year condition was unable to reach a consensus on solutions. All other groups chose solutions requiring monitoring, with the most often cited rationale, especially in 30 year conditions, was that the population must be aware of the supply. Taking no action was the single most frequently cited worst solution.

Reducing usage through rationing rather than pricing was favored by 80% of the groups and by all groups in the Committee/300 year condition. This was the only condition in which there was concern that all people receive an equal share of the mineral. Committee decisions on resource usage were favored by 65% of groups in 30 year conditions but only 40% of those in 300 year conditions, and by 70% of Committee/30 year groups but only 30% of Territory/300 year groups. The latter were most likely to reason that the public should have a role in the decision, but other groups did not think the public would be well-enough informed. Territory/300 year groups were evenly

split on making decisions apply to the whole planet versus the territories, while the other groups chose to apply solutions to the planet 60% to 70% of the time.

Implications and Conclusions.

Monitoring of resources made obvious sense to all groups in this study, perhaps because this was the only approach which requires no self-sacrifice and no obvious costs. It can also lead to a variety of individual and group responses, from conservation to a run on the bank. The fact that participants chose to pursue solutions rather than not, and to use monitoring, rationing, and committee decision-making applied to entire populations appears to indicate a willingness to allow governments to play the most important role, since these are the only bodies able to employ such approaches. And when resource depletion was imminent, groups were even more willing to forego a democratic process in favor of a committee decision assumed to be better informed. However, the condition here which most closly resembles current reality for most is the Territory/300 year condition, and these groups were least likely to favor decisions applied to the entire population and favored referenda.

It appears then, that among recently suggested solutions to the commons dilemma, monitoring and rationing would be perceived as appropriate under many circumstances. However, the perception that the decisions were made by the appropriate agents and applied to the appropriate groups may depend on the degree of depletion of the commons and the level at which individuals are invloved in these decisions. We recommend that researchers consider these variables in future designs.

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